Assignment 9

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

1. What happens to the strength of concrete on increasing loading rate?
   - Decreases
   - Increases
   **Unchanged by rate of loading**
   No, the answer is incorrect.

2. The post peak behaviour of a typical concrete specimen is:
   - Brittle
   - Semi-ductile
   - Ductile
   - Plastic
   **Bromilite**
   No, the answer is incorrect.

3. As per IS 456:2000 Young’s modulus of concrete is
   - $1000 \, \text{E}_{220}
   - $5000 \, \text{E}_{220}
   - $5700 \, \text{E}_{220}
   - $1900 \, \text{E}_{220}
   **$5700 \, \text{E}_{220}$$
   No, the answer is incorrect.

4. What is the approximate ratio of direct tensile strength to flexural strength?
   - 0.2
   - 0.23
   - 0.33
   **0.23**
   No, the answer is incorrect.

5. The ratio of cube compressive strength to cylinder (50:1) compressive strength for low to moderate grades of concrete is
   - 0.8
   - 1.2
   - 1.5
   - 2.0
   **1.5**
   No, the answer is incorrect.

6. On adding fibres to concrete, what significant alteration will it give to the stress-strain curve of normal concrete among the following?
   - Changes strain hardening to strain-softening
   - Increases the area under post-peak curve
   - Decreases the flexural strength (peak)
   - Decreases the strain at peak load
   **Changes strain hardening to strain-softening**
   No, the answer is incorrect.

7. The axial compressive strength of concrete specimens failing by crushing increases with increasing 1/10 (ratio of height of the second dimension).
   - True
   - False
   **False**
   No, the answer is incorrect.

8. Find the incorrect statements among the ones below, regarding growth of cracks on testing low to moderate strength concrete:
   - ITZ cracks first because the aggregates attract more load initially
   - ITZ cracks cracking after 30% of load is reached
   - ITZ cracks cracking when the cracks spread from ITZ
   - ITZ cracks behaviour of extended deformation results from the failure of aggregates inside the concrete
   **ITZ cracks cracking when the cracks spread from ITZ**
   No, the answer is incorrect.

9. Match the following most suitably:

   | A: Ultra high strength concrete | 1. Deforms more before crushing peak |
   | A: Ultra high strength concrete | 2. High toughness |
   | A: Ultra high strength concrete | 3. Behaviour of concrete at 10-20% of peak load |
   | A: Ultra high strength concrete | 4. Low brittleness indicator |

   | B: High strength concrete | 1. Deforms more before crushing peak |
   | B: High strength concrete | 2. High toughness |
   | B: High strength concrete | 3. Behaviour of concrete at 10-20% of peak load |
   | B: High strength concrete | 4. Low brittleness indicator |

   | C: Normal strength concrete | 1. Deforms more before crushing peak |
   | C: Normal strength concrete | 2. High toughness |
   | C: Normal strength concrete | 3. Behaviour of concrete at 10-20% of peak load |
   | C: Normal strength concrete | 4. Low brittleness indicator |

   No, the answer is incorrect.

10. Statement 1. In the triaxial loading case (compression on three axes), the strength of the concrete is lower compared to the uniaxial compression case.
    Statement 2. Compressive strength increases when confinement of the concrete is done.
    **Statement 1 is true and 2 is false**
    No, the answer is incorrect.

   No, the answer is incorrect.